

AMENDMENTS TO THE CLAIMS

1. (Currently amended) An imaging system comprising:
 - a radiation source directing radiation along a propagation axis;
 - a detector assembly positioned to receive the radiation, the detector assembly including a plurality of substantially planar sheets oriented to extend substantially along the propagation axis and spaced transversely across the axis to define a plurality of axially extending detector volumes; and
 - detection means detecting negatively and positively charged high-energetic particles liberated into the detector volumes to provide for substantially independent signals, wherein the detection means includes amorphous selenium.
2. (Cancel)
3. (Currently amended) An imaging system comprising:
 - a radiation source directing megavoltage radiation along a propagation axis;
 - a detector assembly positioned to receive the radiation, the detector assembly including a plurality of substantially planar sheets oriented to extend substantially along the propagation axis and spaced transversely across the axis to define a plurality of axially extending detector volumes, the sheets receiving the megavoltage radiation longitudinally; and
 - detection means detecting negatively and positively charged high-energetic particles liberated into the detector volumes to provide for substantially independent signals, wherein the detection means includes amorphous selenium.
4. (Withdrawn) A method of fabricating a megavoltage radiation detector, the method comprising the steps of:
 - depositing a plurality of readout electrodes on at least one surface of a substrate;
 - depositing an amorphous selenium layer on at least one surface of the readout electrodes; and
 - depositing a high voltage electrode layer on at least one surface of the amorphous selenium layer.
5. (Previously presented) The imaging system of claim 1 wherein the detector assembly includes a housing that supports a high voltage bus bar operable to connect to a high voltage source and wherein each sheet is connectable to the high voltage bus bar.

6. (Previously presented) The imaging system of claim 5 wherein a surface of the detection means is in contact with the sheet and receives an electrical charge.
7. (Cancel)
8. (Previously presented) The imaging system of claim 1 wherein the detector assembly includes a dielectric element having alignment means for positioning the sheets within the detector assembly.
9. (Previously presented) The imaging system of claim 8 wherein the radiation diverges from the radiation source and wherein the dielectric element is curved to orient the plurality of sheets corresponding to the divergence of the radiation.
10. (Previously presented) The imaging system of claim 1 wherein the radiation source directs megavoltage radiation along the propagation axis.
11. (Previously presented) The imaging system of claim 1 wherein the detection means includes a plurality of layers.
12. (Previously presented) The imaging system of claim 11 wherein the plurality of layers includes a first layer comprised of the amorphous selenium, a readout electrode layer, and a substrate layer.
13. (Previously presented) The imaging system of claim 12 wherein the substrate layer comprises an insulation material.
14. (Previously presented) The imaging system of claim 13 wherein the insulation material comprises glass.
15. (Previously presented) The imaging system of claim 3 wherein the detector assembly includes a housing that supports a high voltage bus bar operable to connect to a high voltage source and wherein each sheet is connectable to the high voltage bus bar.

16. (Previously presented) The imaging system of claim 15 wherein a surface of the detection means is in contact with the sheet and receives an electrical charge.
17. (Cancel)
18. (Previously presented) The imaging system of claim 3 wherein the detection means includes a plurality of layers.
19. (Previously presented) The imaging system of claim 18 wherein the plurality of layers includes a first layer comprised of the amorphous selenium, a readout electrode layer, and a substrate layer.
20. (Previously presented) The imaging system of claim 10 wherein the substrate layer comprises an insulation material.
21. (Previously presented) The imaging system of claim 20 wherein the insulation material comprises glass.